

However, a number of plants were found only at this and another rockhole. These were: *Eragrostis dielsii*, *Triglochin calcitrapa*, *Phlegmatospermum cochlearinum*, *Lepidium* sp., *Omphalolappula concava* (also at Wilson Bluff), *Crassula siekerana*, *Chenopodium album*, *C. melanocarpum*, and also a *Tetragonia* sp. that had large cabbage-sized leaves covered with shiny globules of transparent stuff making a very squishy "ice-plant".

AMONG SALTBUSH

The only annual was *Zygochloa ovatum*.

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A MIGRATION OF *VANESSA KERSHAWI* (McCOY) (LEPIDOPTERA: NYMPHALIDAE) IN WESTERN AUSTRALIA

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The period 17 to 23 August, 1973 was spent on a field trip from Perth through Moora, Carnamah, Mingenew, Morawa, Wongan Hills, Northam, Narragin and Collic and back to Perth. This round trip coincided with a migration of the Painted Lady Butterfly (*Vanessa kershawi* (McCoy) and provided an unusual opportunity to observe its progression. This species is known to be a migrant (Smithers and Peters, 1966; Smithers, 1969) in eastern Australia; there are no published records of movement in Western Australia but migrations of varying extent are probably annual events, Mr. Noel McFarland (*in litt.*) having observed one near Geraldton in August, 1972.

From 11 to 22 August very few butterflies were seen in the Perth area and none were *V. kershawi*; the weather was intermittently suitable for butterfly activity.

On travelling north the first *V. kershawi* were seen 10 km south-east of Coorow where a count gave 6½ hr./45 metres, all flying in a south-south-west direction. Similar counts, giving approximately comparable densities, were made at several points along the route given above between Coorow and Morawa on 18 August and Morawa and Pithara on 19 August; a few specimens were seen south of Pithara. The weather was windy and overcast along some of the route of the 19 August.

V. kershawi was not seen in the Northam area on 20 August and only an occasional specimen seen from York to Williams on 21 and 22 August. By 23 August, however, the species was common at Wellington Dam and southerly population movements were observed between there and Perth.

These observations indicate that a moving population had reached just south of Coorow by 18 August and that I travelled through it until reaching the Pithara area south of which only a few specimens were encountered. The movement clearly continued until I re-entered it at Wellington Dam on 23 August, by which time *V. kershawi* had populated the whole coastal area by immigration.

At a point 5 km north of Carnamah, where a large stand of mature, flowering *Helichrysum* occurred together with Capeweed (*Arctotheca calendula*) some specimens of *V. kershawi* were seen to be flitting around the plants whilst others were flying straight through the area in typical migratory flight largely ignoring the flowers and not settling on the larval food plants.

Also, a distinct maturity gradient was observed in the host plants, those in the Carnamah area being mature and in flower whereas those

in the Collie-Williams area were much younger. It seems likely that southerly invasion is timed to coincide with the state of growth of host plants.

Western Australia is clearly an area in which detailed studies on the movements of *V. kershawi* could be made; this note is published with the hope that further observations will be made and recorded on migration of this and other species in the State, for which very few insect migration records have been published.

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MECOPTERA AS VECTORS—A NEW RECORD

By G. J. KEIGHERY, University of W.A., Nedlands

The Order Mecoptera, in Australia, consists of some twenty species distributed in eight genera (Bornemissza, 1966, and Riek, 1954). In the adult stage they are slender, slow flying predators of soft bodied insects, e.g. bees, flies (Bornemissza, 1966). The largest and most widespread genus is *Harpobittacus* (fig. 1).

A note of blossom visitation by *Harpobittacus australis* was found in Riek (1970). He states that adults of this species obtain prey and nectar from flowers of a *Leptospermum* sp. at their emergence sites in Eastern Australia. He indicates that later in the season more species may be visited, but no details are given. From personal observations in Western Australia the author doubts that *Harpobittacus* would be likely pollinators of *Leptospermum*; bees, wasps and flies are the major visitors.

No other records of blossom visitation could be obtained from the scattered Australian (e.g. Hamilton, 1919) or overseas literature (Faegri and Van der Pijl, 1971; Knuth, 1909 and Percival, 1965) on pollination. However, two other records were found in unpublished data. Symmington (1963) noted that *Harpobittacus similis* visits *Calectasia cyanea* R.Br. (Xanthorrhoeaceae). However, the author would consider that these visits are to obtain prey, since larval instars of a lygaeid bug were also found in these flowers, and Anway (1969) noted that *C. cyanea* is autogamous, pollination occurring in the bud stage. Kenneally (1970) has observed *Harpobittacus* sp. visiting flowers of *Diplopeltis huegelii* Endl. (Sapindaceae). These were noted to be obtaining nectar from male flowers.

The author has noted adults of *H. similis* actively foraging in the floral heads of *Podolepis lessouii* (Cass.) Benth. (Asteraceae) at Regans Ford and Jurien Bay. Also adults of this species have been observed systematically visiting the floral heads of *Eryugium pinnatifidum* Bunge (Apiaceae) at Cockleshell Gully (N. of Jurien Bay) and Yanhep. This is shown in fig. 2, a drawing from a kodachrome.



Fig. 1.—Adult of *Harpobittacus similis*.